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AMERICAN VETERINARY REVIEW,

DECEMBER, 1891.

EDITORIAL.

SHALL IT BE UNION OR DIVISION IN OUR RANKS.—At the twenty-sixth annual meeting of the United States Veterinary Medical Association, held September 17th, 1889, a resolution, offered by Dr. C. P. Lyman, was adopted, for the "establishment of a central legalized body of veterinarians;" and the matter was referred to a special committee of three of the best working members of the Association. At the last meeting, held in Washington City, this committee was discharged. Had they failed in their efforts to bring the matter to a satisfactory issue? Had they exhausted themselves in vainly endeavoring to devise measures for the promotion of the objects contemplated by the resolution of Dr. Lyman? We do not know, and therefore cannot state, for since their appointment nothing has been heard from the committee, except that they have held one meeting; but with what result is, we believe, as yet unknown to all but those who were present. We regret the discharge of the committee, for we believe that the object of the resolution has been misunderstood or disregarded. We have perhaps no right, and possibly no sufficient data by which to construe the motive or interpret the purpose of Dr. Lyman in the matter, but after giving the subject much thought and consideration, we have adopted the conclusion that the purpose of the proposed measure was the establishment of a policy of consolidation and a union of sentiment throughout the membership of

the veterinary profession—a bond of consolidation, a union in the execution of the various departments of labor in which every veterinarian is engaged, whatever it may be, whether his daily practical work, or that of teaching. Our humble apologies are tendered to the Doctor if we have wrongly interpreted his thought, but in any case, we alone are in fault. The responsibility is ours alone, and he must not call others to account for our errors, if it is indeed an error.

Consolidation and union for veterinarians, as for all others, means strength, and springing from a central national organization, extending its influence over the entire country, and by its force elevating the standing of our profession by urging forward the movement for the requirement of a better obligatory education, and, as a consequence, elevating our standard and influence, and our usefulness in the general domain of science—was this Dr. Lyman's object? That the committee has failed to incubate, or has incubated without producing any results bearing upon this important subject, we sincerely regret, but our greatest regret is, that they should have consented to be discharged without announcing the nature of their deliberations, with the reason why they proved so wholly abortive. We cannot overcome the impression that if they had met with even a moderate degree of success, it would have been greatly to the advantage of our guild, both now and for those who will come after us.

At the last meeting of the Association in Washington, one of the most valuable members of that body brought forward another and kindred (?) proposition, embodied in a motion to the effect that "at an early period no candidate shall be admitted to membership unless he be a graduate of a school which has a three years' curriculum, in terms of six months, and at least four veterinarians among its faculty." This would be a most excellent measure, and one which we feel confident has been submitted with the best of intentions, and also with the noble design of elevating our professional standards.

But is the plan a practicable one? Is the execution of the resolution possible? Yes, will be the reply. The Associ-

ation has a right to establish rules for its own guidance, and that is a good one, as no doubt it will raise the standard of its members. But it is also to be considered that if it is the intention to strike at the schools which have only a two years curriculum, and one or more (even four) veterinarians in their faculty, these institutions have a similar right to establish rules for their own guidance, and will not the consequence naturally follow that when they find themselves thus excluded from the Association, they will on their part forthwith turn their backs upon the body which ignores them? How many veterinary schools in the United States have a three years' curriculum? How many actually have four veterinarians in their faculty? How will it be known whether a graduate has attended the three six months' terms of study? How will it be established that the professional education acquired in a three years' school is better than in that of a two year institution?

And the queries might be largely multiplied and a variety of answers given without getting at the final and satisfactory solution of the matter. If we are not mistaken, this second resolution is directly antagonistic to that of Dr. Lyman. Then if one means consolidation and union, what can be the spirit of the other if it be not division and discord?

BORROWED FEATHERS—HOW TO PLUCK THEM.— Scarcely a week passes, when either in our capacity of Editor of the REVIEW, or as dean of one of our colleges, we are not requested to pronounce upon the qualifications of some unknown man, and as to his right to the title he assumes as a member of the veterinary profession.

Sometimes we are approached through anonymous letters, and at others interviewed personally, and it rarely occurs that we are able to do justice to the truth and at the same time, answer the applicant satisfactorily. It is a remarkable fact, however, how often the assumption of the same title recurs. Our correspondents and interviewers not only flourish an imposing (no joke intended) array of familiar initials, every man being a V. S., or a D. V. S., or a D. V. M., according to which selection from the alphabet appears to his ears most euphonious, but often claims to have been

graduated from one or more of our most eminent and best reputed schools. We are not sure of the exact number of cards sent to us inscribed with the name of parties calling themselves graduates of the American Veterinary College, but they are very many.

Now, to simplify the work of answering all these letters, communications and solicitations, we will remark that every school publishes yearly a revised list of its *own* and *regular* graduates, and that such a list is authentic and *official*, and that consequently, the name of every man who claims to have been graduated by any designated school, if his claim is a true one, will be contained in that list. If it is not, he is an *impostor*; that is the long and short of it, and he is liable to legal prosecution.

But that is not the only kind of feather likely to be borrowed. These are easily identified, and plucked, leaving the bird cold and featherless, ready for singeing, and merely covered by his own confusion. But there are other persons who, without being anxious to be known as graduates of a school, assume the general title of veterinarian, merely.

To this, we suppose that in this country no one ought to object. In this land of liberty a man may clothe himself with all the titles he fancies, and if he is allowed to go at large wearing the plumage of a general, colonel, captain, honorable, doctor, judge, professor, and so on to the end, if there is truly any end to the catalogue of pseudo notables —we do not say *not ables*—why should the title of veterinarian be held too sacred to go on the list among other prenominal handles? All the feathers, we fear, will never be plucked off.

Our friends in Western Iowa, however, have, somehow, imbibed peculiar notions on this subject, which are forcibly and practically expressed in a bill which is about to be introduced in the Legislature of that State, and which, if enacted into a law, cannot but tend to cause discomfort and discomposure in the minds of a number of individuals. The aim of this projected measure is to prevent the false assumption of the title of *veterinarian* or any *analogous* designation, by

making it a misdemeanor, punishable by fine or imprisonment, or both.

We learn by a letter before us that there are eighty-two veterinary graduates in Iowa, and that it is through the action of the Iowa State Veterinary Medical Association that the appeal to the Legislature is to be made to pass the law. Now, how will this measure operate, if consummated? Will it elevate the profession; will it tend to prevent quackery; would it be a long stride in the right direction? These are the questions to be confronted. *Our* answer will certainly be that this, or a measure of this character, cannot be otherwise than advantageous to the profession, and that it would certainly prevent a great deal of quackery, and for that reason, every effort ought to be made to carry it fully into effect. By all means, prevent, if possible, birds of carrion from imposing themselves upon the public as respectable fowls.

We think that legislative action, carried to this length, would unquestionably be just and beneficent, but beyond this it would be overstepping its province, and the power which might be asked to examine men about to compete for the right to practise in our ranks, before a board of examiners, ought not to be looked for. Nor would we acquiesce in the legislative action which would allow societies to grant diplomas or issue certificates to the alleged, "self-made," men who have ignored the existence of our veterinary schools, while they could have availed themselves of their advantages, for the last twenty-five years.

The generation of "self-made" men, which existed prior to the establishment of veterinary schools in this country, is pretty nearly extinct, and the generation of this last quarter of century has no longer the same excuse, and if veterinary practice is a remunerative occupation, and if the title of veterinarian is worth wearing, it is worth working and contending for.

We are far from confident of the success of our friends in Iowa, in obtaining the passage of this bill, but they, nevertheless, have our best wishes in their contest. But when it comes to the question of giving them the power to examine

candidates and to authorize them to call themselves veterinarians, we would suggest that instead of a board of examiners composed of the members of their own society, these candidates should be referred to the faculty of a veterinary college, to pass upon their competency and award to them the coveted privileges and distinctions.

ORIGINAL ARTICLES.

THE RELATION OF PARTURIENT ECLAMPSIA OF WOMAN TO PARTURIENT APOPLEXY OF THE COW.

By W. L. WILLIAMS.

The identity or close analogy of parturient eclampsia of woman and parturient apoplexy of cows has long been confidently asserted by some observers and stoutly denied by others, and so long as the etiology and pathology of both are in a decidedly unsettled state, this difference of view must continue. It is not material either that veterinarians should believe the two diseases identical except that it broadens our field for observation, renders data more reliable and furnishes the student with more material for use.

On page 194 of the current volume of the REVIEW, Dr. Tait Butler of the Mississippi Agricultural College takes occasion to criticise adversely a suggestion made by me in a paper on "Parturient Eclampsia in the Mare," that the two above affections are probably either identical or closely allied.

He first attempts to show that the premonitory symptoms of the two afflictions are wholly dissimilar and contradictory, and proceeds to quote from Lusk a train of phenomena seen in eclampsia almost wholly subjective, such as headache and loss of memory, which, he leaves us to infer, are not to be observed in the cow. As this class of symptoms cannot be traced in the cow, such argument is evidently irrelevant.

Other premonitory symptoms of eclampsia are noted as occurring in woman, which do not ordinarily happen in cattle, such as œdema of the face and legs, phenomena rarely seen in

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cattle diseases of any kind, hence not likely to occur in this malady.

Pregnant women have quite frequently some œdema of the face, but it is not seen in pregnant cows, and so cannot be expected to be present in apoplexy.

Dr. Butler lays especial stress upon the supposition that the milk secretion is not diminished in the early stages of eclampsia in woman, whereas it is diminished or suspended in cows. To say that this loss of lacteal secretion is *not recorded* in woman is not saying that it continues unabated, and even if it is not suspended in woman we fail to see the application of his argument, owing to the manifestly great difference in the development of the mammary glands in the two classes of patients.

He also states that while amaurosis is a common premonitory symptom of eclampsia in woman, it has not been observed during the earlier stage of the disease in cows. He seems to have overlooked the fact that Fleming asserts that * "congestion of the brain appears to be present at the commencement," which evidently includes an amaurotic condition of the eye, and the assertion of Franck† that amaurosis occurs early. Amaurosis has, in our clinical experience, been quite constant in the earlier stages.

For the sake of comparison he then cites the train of symptoms of eclampsia in woman as delineated by Carpentier, and gives essentially those seen in apoplexy of the cow, such as livid pallor of face (not distinguishable in cow for evident reasons), rolling of eyes in orbit, dilation of pupil, mouth drawn to left side (in cow head drawn to left side), spasmoid movement of jaws, laceration of tongue by teeth (cows do not lacerate tongue with teeth in any disease heretofore described), opisthotonus (always observed in cow in latero-recumbent position), etc.

We admit his proposition that *eclampsia* of woman is characterized mainly by *convulsions*, while *coma* is the most marked

*Veterinary Obstetrics, p. 645.

†Leburts Hilfe S. 446.

in apoplexy of the cow. So indigestion produces coma in the cow and convulsions in children, but it remains indigestion. Dr. Butler has been extremely unfortunate in his observations regarding convulsions in apoplexy of cows, and is led to doubt the assertions of Fleming and Franck that they do occur, and seeks to have us believe that veterinarians who have reported convulsions do not know the difference between convulsions and delirium.

There are many careful observers who fully agree with Franck and Fleming. In several cases we have observed irreducible polapsus of the uterus in apoplexy of cows, and we can certainly attribute the violent and insurmountable expulsive efforts not to *delirium* but to *convulsions* only.

He next attempts to prove the non-identity of the two affections by reference to the pulse, which ranges from 100 to 140 beats per minute in eclampsia of woman, while he would have us believe it is *slow* and *weak* in apoplexy in the cow. He takes his figures from one in convulsions, the other in coma. In woman in convulsions there is an increase of pulse rate of 25 and 75 per cent.: while Franck* records that in apoplexy in cows running a convulsive course, the pulse rate is increased 100 to 110 per cent., and it must be admitted that to make the comparison relevant we must select analogous cases.

In comparing the urinary secretion, he concluded that in eclampsia it is suspended, in apoplexy abundant; but a careful perusal of his own statements shows that they are utterly contradictory, and that whereas it happens that the woman has urinated shortly before the attack and evacuated the bladder, the cow has failed to do so, hence the bladder is somewhat distended, and once the symptoms are established, the secretion of urine ceases, the empty bladder of the woman remains empty and the full bladder of the cow remains full—but neither has marked additions to its contents during the disease.

After admitting an elevation of temperature in the early stages of apoplexy in the cow, Dr. Butler again does violence

*Leburthilfe S. 446

to his own assertions by remarking that "Veterinarians are equally unanimous that in cows with parturient apoplexy the temperature is lower than normal or at least that it is not elevated." To what veterinarians does he refer when he admits the opposite himself, and Fleming and Franck, respectively the highest English and German authors on veterinary obstetrics, distinctively state that there is an elevation of temperature in certain cases and in certain stages.

What more can be said of eclampsia in woman? Fleming and Franck aver that during convulsions in cows the temperature is elevated, during coma lowered. Human writers say that in parturient eclampsia there is elevation of temperature during *convulsions*, depression of body heat during *coma*.

Dr. Butler emphatically asks "*Will Dr. Williams please inform us of a single example of disease affecting women and cows, known to be due to the same causes and possessing similar pathological lesions, where this difference in temperature is admitted?*

Certainly.

Take acute indigestion, it may cause convulsion in puppies, delirium in the horse, coma and depression of the body temperature in the cow, headache and fever in woman, all due to ingestion of food of improper quality or quantity, or at improper times.

In asking this emphatic question, as well as in his discussion of the question of temperature generally, Dr. Butler has wholly ignored the generally accepted theories of body heat, founded upon physiological research and clinical observation. We admit that eclampsia of woman is characterized mainly by *convulsions* and parturient apoplexy of cows by *coma*, but eclampsia produces *coma* in some stages, and in cow apoplexy *convulsions*, as we have shown above.

We have also shown, by the best attainable authority, including Dr. Butler, that during *convulsions* in cow apoplexy we have fever, and during *convulsions* of eclampsia we have fever. It is equally certain and rests upon undoubted authority that during *coma* in eclampsia of woman and apoplexy of cow we have a lowering of body temperature. Dr. Butler insists, however, that the temperature of a woman in convul-

sions and that of a comatose cow should correspond, and by this mode of reasoning attempts to prove the non-identity of the two affections under consideration. Dr. Butler should, we think, bear in mind that body temperature depends largely upon two factors, the amount of heat generated within the body by means of tissue change, and the facility for the elimination of this heat when once formed.

That the nervous system exerts a far-reaching influence over both these processes has been fully demonstrated by physiological experiment. In sleep (brain anaemia) we have a distinct depression of body temperature, and the same holds true in almost, if not all cases accompanied by coma. Evidently the lower temperature in coma must be referred to a suspension of the thermogenic functions of the nervous system, not alone in sleep, nor in hibernation, but more markedly in coma preceding death in freezing or from certain drugs (curare, alcohol), producing probably analogous states of the nervous system. In no disease or pathological state perhaps, have we a better example of this law than in parturient apoplexy of cows, and in it we see a highly economic provision of nature. It is estimated, and upon good grounds, that in most animals a large proportion of animal heat is given off by the skin, and clinical observation goes far to show that in disease in which, owing to exalted tissue change, there is an excessive production of heat, the skin plays if anything a more important role in the maintenance of the normal body temperature than in health. On an excessively hot day, so long as a man or a horse sweats freely all goes well, but once this ceases, sun-stroke is the result. In both cases the skin ceases to perform its normal action and animal heat accumulates.

In man coma supervenes rapidly as a rule, while in the horse, tetanus and delirium set in with equal promptness and frequency, and the result is a comparatively higher fatality in horse than in man, because probably with coma the production of heat largely ceases in the latter, while in the tetanus and delirium of the horse the thermogenic functions continue.

Again, in that disease which I ventured to describe as

parturient eclampsia in mares,* and which provoked Dr. Butler's criticism,† and which was characterized by intense tetanic convulsions, during which assuredly there was great tissue change and consequent heat production, we still observe no elevation of temperature, probably because of *extraordinary perspiration*, which certainly acted as a powerful refrigerant.

Owing to the rudimentary condition of the sweat glands of the cow no such abundant cutaneous refrigeration is possible in health or disease, but nature seems to guard this defect by a well marked disposition in this animal to coma, not alone in parturient apoplexy but in many bovine affections. So when parturient apoplexy has become established, in most cases coma rapidly comes on, heat-production (tissue change) ceases, all excretions become suspended and respiration and circulation are carried on at a minimum rate compatible with life—a condition analogous in many respects to profound sleep or hibernation—so that a cow may lie hovering between life and death for several days, yet when recovery takes place no evident loss in weight or condition has ensued.

It certainly seems that with the defective means possessed by the cow for prompt discharge of surplus body heat, coma serves a highly economic use, and that without this provision and with the existing condition of the skin we would be compelled to record a much higher temperature and fatality in parturient apoplexy.

In emphasizing his statement that in parturient apoplexy in cows the pulse is *slow*, in contradistinction to the *rapid* pulse in eclampsia of woman, he takes occasion to say, "My statement is, I am aware, antagonistic to the 'authorities,'" and proceeds to aver that the authorities are wrong. This conclusion is based upon his personal observation and that of a few friends—a very illogical basis, exhibiting marked incredulity toward his fellow veterinarians. Because Dr. Butler has not observed a quickened pulse in parturient apoplexy is not sufficient grounds for practically asserting that Fleming,

* Am. Vet. Review, December, 1890.

† Ibid, July, 1890.

Franck and others could not count a cow's pulse. What Dr. Butler did not see does not overthrow what others saw; his negative does not overthrow their positive.

Dr. Butler attempts to show that there is a wide disparity in age between women subject to eclampsia and cows subject to apoplexy, but quotes authorities to show that eclampsia in woman occurs most often between twenty and thirty years, while in cows it is generally admitted to occur most often between the fifth and tenth years—surely quite analogous ages.

He further draws attention to the fact that eclampsia occurs most often in primiparous women, parturient apoplexy never in primiparous cows, and scouts the idea that all cows become pregnant before maturity, and insists that it is the *primiparous* condition of women, not maturity, that predisposes, and says, "few will be so bold as to assert that all cows become pregnant before maturity." Very true, but we never knew one to become pregnant for the first time after maturity, as the butcher usually interfered, and if Dr. Butler will count the cases of primiparous adult cows within his observation we will venture to assert they will not reach high figures. Besides, the disease occurs in cows as young as three years, at which age they have rarely given birth to more than a second calf. In Dr. Butler's effort to draw a distinction between the highly developed milking powers of the cow predisposed to apoplexy and the lack of any mention of such development by writers on human medicine in women subject to eclampsia it would be well to bear in mind that the state of milk secretion is rarely spoken of by pathologists except in animals used for dairy purposes, unless it be in connection with diseases of the mammary glands; and besides, the duration of eclampsia in women is rarely sufficient to permit of accurate observations.

Dr. Butler's quotations * from Carpentier and Lusk, intended to show that difficult labor *causes* eclampsia in woman, appear to indicate rather that the disease is a *complication* rather than a *result* of the labor, and other excellent writers

* Am. Vet. Review, Vol. XV., p. 200.

on human obstetrics * positively assert that eclampsia *causes* the labor—a condition not unknown in apoplexy in cows. And even the writer, only a few lines below, virtually admits that eclampsia in women *causes* parturition by asserting that the disease in pregnant women is followed by parturition in almost every case, and follows up this strong assertion by quoting Depaul as saying that not less than 93 per cent. of eclampsia cases in women occur prior to delivery, so that by his own reasoning surely difficult labor in women is *rarely* followed by eclampsia—a condition fully analogous to that observed in cows.

He then ventures to state that fully 99 per cent. of cases of apoplexy in the cow occur at from 12 to 48 hours after birth, and strongly intimates again that other veterinarians have erred in their diagnosis regarding the other possible one per cent. Again we would repeat that the positive evidence of reliable observers who record the disease *before* parturition cannot well be wholly destroyed by Dr. Butler's failure to see identical cases.

I never saw a case of cystic calculus in the horse, yet I believe it occurs. His figures above quoted (99 per cent. of cases between 12 and 48 hours after birth) also seem very strong in the absence of positive data to support it.

Franck † records 123 cases in which 22, or 18 per cent., occurred inside of 12 hours, and 30 cases, or 25 per cent., beyond Dr. Butler's maximum time, thus placing 43 per cent. of cases outside of the limits in which Dr. Butler would have 99 per cent. if not all, occur, and yet he fails to furnish data to uphold his position.

It is further attempted to show the non-identity between eclampsia of woman and cow apoplexy by the fact that the former predisposes to post partum hemorrhage, but this logic seems destroyed by the equally evident fact that post partum hemorrhage is common in woman and unknown (except from wounds) in the cow. ‡

* Vid. Barnes, System of Obstetrics.

† Franck's Leburtschilfe S. 451.

‡ Vic. Franck's Leburtschilfe S. 196.

It may be that Dr. Butler is correct in his assertion that the Traube-Rosenberg theory of eclampsia in woman is generally discarded by human writers of the present day, but from the limited amount of literature on the subject at hand it seems that they have not all discarded it nor do we see clearly upon what grounds he bases his statement. Admitting, however, his correctness in the matter of majority of adherents to a given theory, he is wholly in error in the assumption that this theory of brain œdema and consequential anæmia is wholly "borrowed" from human medicine and rests for its force upon such an origin. This theory has a goodly array of facts to stand upon, wholly independent of eclampsia of woman, and further study of this disease in cows is quite likely to yet throw some light upon the pathology of the former. The theory rests upon, 1st, The exalted blood pressure and hydræmia existent at period subject to attack; 2d, The class of animal in which this exaggeration would naturally be greatest; 3d, Semiology; 4th, The results of treatment based upon this theory; 5th, Pathological anatomy as revealed by autopsy.

We are by no means certain that the disease we ventured to describe as parturient eclampsia in the mare is identical with the disease so named in woman, nor with apoplexy of cows, nor that any two of the three are the same, but in the present state of our knowledge we do believe that the majority of facts is favorable to the identity of the three.

EXPERIMENTS WITH GLANDERS LYMPH.

Translated by R. MIDDLETON, A.M., D.V.S., Philadelphia, Pa.

The specific reactions obtained from injections of lymph, produced from cultures of tubercle bacilli, in phthisical individuals, has opened a new avenue to the ultimate eradication of infectious diseases, which promises to develop into a subject of colossal importance.

This principle, "tuberculin," discovered by Koch, has been applied in many cases, but only as a diagnostic adjunct. The

use of this agent upon animals afflicted with tuberculosis produces a series of phenomena which are absent in subjects free from tubercular taint.

Since diagnosis, by the common methods of auscultation and percussion is unreliable, especially so in the primary stage, it becomes of extraordinary importance to proceed with the development of the multitudinous characteristics of tuberculin, and to reduce its application to a definite science. Respecting the difficulty of *intra vitam* diagnosis, tuberculosis is not unlike equine malleus, especially so in the chronic cases of occult glanders which are continually being met in old horses. Old animals, which at post-mortem show indisputable lesions of glanders, have, throughout their lives, perhaps, never exhibited the slightest trace of symptoms referable to that disease, probably the only appearances of unthriftiness being the short, feeble cough and rough hair.

It is no wonder, therefore, that of the many cases of death occasioned by the presence of glanders in a stable, there have been healthy horses slaughtered, under suspicions of also harboring the disease; the protection and preservation of healthy animals becomes a very desirable accomplishment from a general economic point of view.

No remedy has remained untried which afforded the faintest hope of facilitating the detention and extirpation of glanders. Proposed methods are either too ceremonious or too untrustworthy to be of practical value; inoculation of animals more susceptible to malleus than the horse, application of poor culture to horses already afflicted, excision of the sub-maxillary glands, artificial production of fever and other methods have proven unsatisfactory. An agent, to be of use as an aid to diagnosis, must produce a *specific* action in affected animals only, and that in a comparatively short time. Such a medicament would be analogous to "Tuberculineum Kochii," and may only be procured from the glanders bacillus.

Kalming and Hellmann have busied themselves searching such a product, and both have succeeded in securing an increase of temperature after injecting it.

The first mentioned of these two investigators is deceased,

the direct result of personal and accidental inoculation; his experiments consequently remain incomplete.

I projected a number of similar investigations with lymph which I cultivated, and will rehearse my results in the following paragraphs:

The fact that the surface of the potato,—upon which the breeding of the bacillus was affected,—was at first green, later brown, and finally of a black color, leads me to suppose that this small organism generates a product which colors the soil upon which it grows and propagates. This must be at once a peculiar and a specific material, since no other bacterial organism is able to cause a similar play of tints upon the potato section; old and hard potato cultures of the malleus bacillus are a jet black color.

By pouring over this a liquid of equal parts of water and glycerine, and placing the latter in an apparatus maintaining a temperature of 95° F., it is possible to obtain an extract which, after being filtered several times, and sterilized by steam, possesses a characteristic odor, neutral or slightly acid reaction, a dark opaque yellow color and oily consistency. This extract contains the coloring matter of the bacillary colony, while the insoluble products of the organism remain upon the tuber.

An extract or concentration prepared in such a manner is called "malleine" after receiving a dilution of a few drops of corrosive sublimate solution. On April 16, I injected 0.2 ccm. into each of two guinea pigs; one was healthy, the other had been infected with glanders on April 1. I also inoculated another pig on the latter date, but did not afterward inject malleine.

The sound subject never manifested any reaction referable to the inoculation, but it died a few days later of an acquired disease. Some time later I gave the affected pig another injection of 0.2 ccm. The abscesses in the inguinal region hereupon rapidly disappeared, but there developed a suppurative inflammation of the left eye. The animal is living to this day. The second animal infected by glanders, but not receiving the glanders lymph, developed abscesses in the inguina

region, inflammation of the carpal joints, and nasal discharge. Its condition continued to deteriorate from day to day, finally necessitating its death. The post-mortem revealed numerous subcutaneous abscesses, suppurative arthritis, and ulcers of the septum nares.

At the beginning of June, this year, another opportunity offered to test the malleine upon equidæ. On a certain farm in the district of C——, commencing in April, there were eleven horses; five of these, afflicted with glanders, were killed. We found, together with recent alterations of the mucous membrane and small nodules, also quite old caseous and calcified collections in the liver, lungs and spleen; many old cicatrices were visible throughout the respiratory track, so that we were justified in dating the origin of the disease over one year back. Shortly after this one of the surviving mares met her death from a wound, and was also discovered to be glandorous. This mare had, some time previous, given birth to a foal, which, together with the remaining five horses—not any of them having shown suspicious symptoms—was killed.

Through the kindness of the owner, I was given permission to institute some experiments, and arrived at the farm one day previous to the time set by the police authorities for their death.

I took one part of lymph, between three and four weeks old, and carefully sterilized; to this I added ten parts of a two per cent. carbolic solution, as a further means of killing any bacilli which might exist in the same. The horses used were:

No. 1. Brown gelding, four years old, medium well nourished, short cough, but otherwise apparently healthy.

No. 2. Sorrel mare, nine years old, medium well nourished, with short, sharp and raw cough.

No. 3. Sorrel mare, eight years old, medium well nourished, with weak cough.

No. 4. Sorrel mare, fifteen years old, lachrymation of left eye with excoriation of the skin inferior to same.

No. 5. Brown mare, one and one-quarter years old, well nourished, no external signs.

No. 6. Brown filly, fourteen days old.

In Nos. 1, 2, 3, and 4, I used $\frac{1}{2}$ ccm. of the fluid, i. e. 0.3 ccm. of glanders lymph; on No. 5, 0.2 ccm. of lymph, and on No. 6, 0.1 ccm. of lymph; the injections were made hypodermically on the neck or shoulder by means of a sterilized syringe. The first puncture occurred at two o'clock P. M. and was followed at 9.30 P. M. by a second puncture of 0.5 ccm. malleine in Nos. 2, 3, and 4, and of 0.3 ccm. in Nos. 1, 5 and 6. The suffixed table shows variations of temperature and pulse rate: (See page 501.)

Soon after the inoculation there developed at the point of injection a sensitive, doughy and variable swelling of the cutis and subcutis in all animals excepting the sixth.

Considerable vacillation of temperature was induced, as will be seen from the table in Nos. 1, 2, 3, 4 and 5; this was most intense fifteen hours subsequent to the first and eight hours to the second injection. In No. 1 the temperature advanced from 101° F. to 104° F.; in No. 3 the increase amounted to 3.96° F., and in the others from 2.5° F. to 3.4° F. In No. 6 a slight increase of 0.9° F. occurred seven hours after the first injection; but not only did it not rise after the second injection, but it actually fell to 100° F. While the five horses were weak and apathetic on the 11th of June, the foal experienced neither of these two states; the appetite of all six horses remained unaffected after the inoculations. Nos. 1 and 4 exhibited nasal discharges; the former of mucoid nature and from the left nostril—the latter watery and bilateral. The animals were destroyed at 10 A.M. June 11th; glanderous changes were present in Nos. 1, 2, 3, 4 and 5, while in No. 6 no alterations, either nodular or ulcerous, were apparent. The most considerable pathological lesions were found in Nos. 2 and 3; these consisted of fresh red granules and old caseous and calcareous nodules, together with a chronic pneumonia with numerous cicatrices in the trachea and larynx. In Nos. 1, 4 and 5 the pulmonary lesions were more circumscribed, but otherwise the same. Imme-

	1.	2.	3.	4.	5.	6.
June 10, 2 P.M....	0.8 ccm.	0.3 ccm.	0.3 ccm.	0.3 ccm.	0.2 ccm.	0.1 ccm.
First Injection....	101.1° F.	100.9° F.	100.7° F.	100.7° F.	100.7° F.	101.1° F.
5 P.M.....	100.9° F., p. 48	100.4° F., p. 44.	100.7° F., p. 54.	100.2° F., p. 50.	101.1° F., p. 44.	101.1° F.
7 P.M.....	100.7° F., p. 52.	100.9° F., p. 48.	101.6° F., p. 56.	100.9° F., p. 50.	101.1° F., p. 54.	101.8° F.
9 P.M.....	0.3 ccm.	0.5 ccm.	0.5 ccm.	0.5 ccm.	0.8 ccm.	0.3 ccm.
Second Injection..	100.4° F., p. 44.	100.9° F., p. 52.	101.8° F., p. 58.	100.9° F., p. 48.	102.9° F., p. 52.	102° F.
June 11, 5 A.M....	104.1° F., p. 60.	108.6° F., p. 54.	104.7° F., p. 64.	102.9° F., p. 56.	104.1° F., p. 48.	101.4° F.
7.30 A.M.....	104.7° F., p. 60.	108.2° F., p. 56.	103.8° F., p. 60.	103.4° F., p. 58.	102.9° F., p. 54.	101.1° F.
9.30 A.M.....	108.6° F., p. 60.	108.2° F., p. 48.	103.2° F., p. 60.	103.1° F., p. 56.	102.7° F., p. 48.	100.4° F.

dately adjacent to the old nodules in the lungs and liver of Nos. 2 and 3 we could discern a hyperæmic zone. On the 22d of June I inoculated a healthy, black mare, eighteen years old, with 0.3 ccm. of lymph prepared from glanderous horses. At the time of puncture the thermometer per rectum indicated 100.7° F., pulse 44.

	3 P.M.,	100.7° F.,	p. 40.
	6 "	100.4°,	p. 36.
	8 "	100.2°,	p. 40.
	9 "	101.1°,	p. 40.
Second inj. 0.5 ccm. lymph, June 23,	9 A.M.,	101.1°,	p. 40.
	"	" 101.1°,	p. 36.
Third inj. 1 ccm. lymph, June	10 A.M.	100.4°,	p. 36.
	" 1 P.M.,	100°,	p. 36.
	" 3 "	100.4°,	p. 36.
	" 7 "	100°,	p. 34.
	" 9 "	100°,	p. 34.
June 24,	7 "	99.6°,	p. 34.

In this case, as in those mentioned, there also appeared a small sensitive and doughy swelling of the submucosa; otherwise the general health and deportment of the subject did not alter; its temperature varied only within the range of normal deviation, despite the administration of 1.8 ccm.; no glanderous lesions were found. At the beginning of February malleus appeared in a stable in "C."; at first only one horse was attacked, but on the 12th of March a second was killed affected with it. Toward the end of June another animal sickened of glanders; the same was a gray gelding eight years of age. The right submaxillary glands were swollen to the size of pigeon eggs, slightly sensitive and movable; alæ of the right nostril covered with amber crusts and accommodating a muco-purulent discharge; septum nasi reddened, and well inferior an indistinct ulcer the size of a bean. Subject otherwise healthy, moderately cheerful and a rough, unkempt coat. On this undoubtedly glandered horse I inoculated 0.5 ccm. of malleine on the 30th of June, 8 P.M.; also diluted with ten parts of a 1 per cent. carbolic solution; temperature 100.7° F., pulse 36.

	June 30th,	10 P.M.,	100.7° F.,	p. 44.
	July 1st,	5 A.M.,	102.7° F.,	p. 44.
	"	7 "	103.4° F.,	p. 44.
Second inj.,	"	9 "	104.1° F.,	p. 44.
	"	11 "	104° F.,	p. 52.
	"	1 P.M.,	104° F.,	p. 60.
	"	2 "	104.1° F.,	p. 56.

By the table quod vide from nine to eleven hours after the first puncture the temperature advanced 1.9° F. to 2.7° F. and later to 104° F. The difference between the induced temperature and the original amounted to 3.4° F.; contemporaneous with which an acceleration of the pulse rate was recorded and an exceeding weakness. From the right nostril an abundant discharge of a purulent, thick nature, more so on the right side; the ulcer, which the day before was not distinctly visible, now became so, and the pale mucous secretion which covered it was replaced by a brown scab. The inter-maxillary glands of the right side increased in size, and those on the left side partook of the swelling and were much softened.

After death I found very numerous nodules in the lungs, mostly of recent formation and red; surrounding several recent dark nodules a diffuse red zone and small red dots and stripes were observed in the center of aged caseous collections; on the Schneiderian membrane some phagedenic ulcers. Transverse section of the maxillary gland disclosed numerous soft points.

To the stable in question there yet belong four horses, which up to this time have revealed no questionable symptoms, but which, to satisfy the sanitarians, must also be destroyed. One of these responded in a decided manner to injections.

It is very evident from the foregoing trials with the lymph that it is able to induce a reaction; in how far this working is specific remains to be determined. The results obtained encourage to further pursuit, which, preferably, should be made by other members of the profession.

APTITUDE FOR VETERINARY PRACTICE.

By W. H. DALRYMPLE, M.R.C.V.S., Baton Rouge, La.

To the minds of many students of veterinary medicine and surgery, the zenith of perfect happiness and fortune is realized on the receipt of the longed-for, and in most instances, well-merited sheet of parchment, the "diploma," enabling them to practice the art and science; when "stewing" and "cramming" at text-books and lectures are past, and all that remains to ensure success is to sit down behind an elaborate sign-board, receive clients, and make entries. It is just at this particular period, however, in the experience of most veterinarians, that troublous times commence. Cases come under their notice that do not "fit in" exactly as they would desire they should with the "text," over which they have spent so many hours, and burnt so much of the midnight oil, and it is at this, the outset of their professional career, when practice becomes a reality, and their future depends entirely upon their own individual efforts, and in a great measure, on the success they have at the beginning, that they are called upon to draw largely on their store of the most valuable of all senses, "common sense."

Perhaps there are no cases met with in practice that afford more discouragement to a young practitioner, and baffle him more, than cases of lameness—and in fact this is not entirely confined to the beginner, because there are practitioners of many years standing who often have grave doubts in their own minds as to the correctness of their diagnosis in very ordinary cases. We have known such men, men of large ability, whose theoretical knowledge was very extensive, but whose failure lay in their total lack of general knowledge of animals in health, their habits, &c. Such failing we cannot, however, attribute to want of common sense, further than in not finding out earlier that they were more suited to some other work in life.

It seems to us, that to attain to any degree of success whatever as a veterinary practitioner, a man should "be

born in a manger," so to speak, have an innate love for animals, be brought up along with them, study their life and habits, get as perfect a knowledge as possible of them in health; for it is only when we have this knowledge that we can observe the slightest deviation from the normal standard. When a young man enters college, armed with this preliminary, but most valuable knowledge, the work of the curriculum is more attractive and interesting, and when he graduates, the theoretical information of which he is possessed is applied more practically; he goes about his patients more like a horseman than an old woman, which latter is very prejudicial to a practitioner, in the eyes of horsemen, and his treatment is usually more rational, which necessarily is common sense treatment.

On the other hand, we often have young men drifting into our ranks whose only incentive has been, probably, that some one whom they knew had made a success of it as a veterinarian, forgetting the fact that the successful man may have had the many primary advantages before mentioned. Of course there are many exceptions, but it very frequently happens that veterinarians, whose knowledge of animals is obtained absolutely from the use of the text-book, prove failures in every-day practice, and consequently cast disparagement on their profession.

Cases of lameness often crop up in practice which tax to the utmost a veterinarian's—shall we say ingenuity?—at all events, his powers of observation. In this connection, a short description of a case which came under our notice may not prove uninteresting.

Some five years ago we were visiting in Northamptonshire, England, right in the midst of one of the best fox-hunting centers there, and within easy riding distance of four of the finest packs of hounds. The animal to which our attention was called was a beautiful dark bay thoroughbred lady's huntress, probably seven or eight years old, and worth at least five hundred dollars. The groom informed us that the mare went short in the off-hind limb, which was most noticeable when leaving the stable under the saddle, and also at

times such as when first starting off after a lengthened "check" in the hunting-field, but the inequality in her gait disappeared as soon as she got "warmed up."

He also told us he had examined the limb thoroughly, paying careful attention to the hock, but he could find nothing whatever to account for the lameness. We then examined the limb, being somewhat suspicious of hock-lameness, viewed it from all points, passed our hand over it, made comparisons with the other, etc., and could not find the slightest irregularity to mar the symmetry of as fine a pair of limbs as ever supported a horse. Some other ground had to be explored to reveal the, so far, hidden cause. We had the blanket removed (the weather was cold and the mare closely clipped) and on "taking in" the off-side from head to tail, as it were, we observed on that side of the withers a large cicatrix, which, when recent, must have been a very ugly gall, and involved a good deal of subcutaneous tissue. It struck us at once we had found a clue. Remembering about the lameness when starting off, and also when asked to move after having cooled off a little, we turned the condition of affairs over in our mind thoroughly before finally giving our opinion. We said to the groom : "The mare is not lame from any pathological condition in the limb, but from the scar on the off-side of the withers." He looked at us in utter astonishment, thinking of our opinion, perhaps, more than he cared to give expression to, but he ventured to remark : "It's a long way off to cause the mare to go lame behind." We told him we would give him our reasons for such a far-fetched opinion, viz : When a portion of the weight of the lady and the saddle are brought to bear on the scar, which is tender and probably painful from the previous day's friction, the mare tries to save herself further pain by taking a shorter stride with the hind limb of that side. Were she to stride normally she would, through continuity of skin and muscular tissue, drag the part to some extent under the saddle, thereby cause more friction, and consequently more pain at every step. A few months after when in London, we received a communication from the groom to the effect that his master (an old

fox-hunting gentleman) and himself fully endorsed our opinion, as the mare only showed symptoms of lameness when under the saddle.

We do not relate this case on the plea of any individual merit, but simply to illustrate the fact that frequently we have to depend so greatly on our powers of observation, and go far a-field to reveal the true cause of not only lameness, but other ailments as well, that it necessarily follows the more knowledge of animals a man can acquire from his earliest beginning, who intends to follow veterinary medicine as a profession, the more success is likely to attend his efforts as a practitioner.

ELECTRICAL ACCIDENTS TO DOMESTIC ANIMALS.

BY JAMES A. WAUGH, V.S., Allegheny, Pa

(A Paper read before the Western Pennsylvania Medical Association.)

The application and utilization of electricity as a motor power for street railway coaches, and the use of cheap or badly constructed or defective arrangements in road-beds, prove sources of occasional serious accidental electrical injuries to horses that are driven over these car-tracks, and come in contact with rails which have become surcharged with an excess of electricity, due to a settling or sinking of the road-bed, and breaking of the underground wires, which cause breaks in the electric circuits.

Horses are often injured by attempting to cross from one set of tracks to another while cars are approaching in opposite directions, and especially when approaching river bridges. The horse happens to step with one fore and one hind foot, or both fore and hind feet at the same time, on the inside rails of the double tracks, and the metallic shoes on the horse's feet act as conductors, which transmit the electricity to the animal and causes it to rear or spring several feet up into the air, and then fall prostrate on the street; while other cases are shocked so severely that they fall prostrate and remain paralyzed. The character of the injury is in proportion to

the amount of electricity received, intensified by violent contact with the street. The shock may be so severe as to cause instant death, or only partial paralysis with almost complete prostration for a few hours, or several days, weeks, or months. The pulse is slow, feeble and irregular; nostrils dilated; respiration slow and laborious; temperature slightly elevated; pupils dilated or contracted, and the eyes presenting a peculiar and unnatural expression, while sometimes strabismus is present, and at other times the eyelids are paralyzed; perspiration rather free in the early stages; mastication and deglutition impaired, and some patients will require an hour or more to drink a pail of water. The head is sometimes held almost in a line with the neck, or twisted on one side with the eye pointing toward the ground; and one ear may be held erect, while the other is lopped and paralyzed. Locomotion is seriously impaired, and the animal stands with its feet wide apart as if trying to brace and steady itself, and when moved, the feet are raised only a short distance from the ground; sometimes the patient is unable to assume a standing position, while others walk and act somewhat like human beings affected with *locomotor ataxia*, and stagger from side to side, and, if hurried, fall down and turn somersaults in all directions. The animal appears much frightened and nervous, and there may be a well-marked quivering of a certain set of muscles for several days or weeks after the accident. The functions of the digestive and urinary organs are somewhat impaired in the early stages, but soon regain their normal condition. The nerve cells are seriously injured, and the functions of the nervous system are impaired, and sometimes permanently damaged. I have not yet had any opportunity for post-mortem examinations on this subject, but Dr. Jackson informed me that Dr. Jennings and himself had found well-marked congestion of the mesenteric glands in a horse that had been killed by an electric shock received on street car-tracks, and the same horse's heart was greatly hypertrophied, which probably accounts for the sudden death. Elevated wires are sometimes displaced and prove fatal to horses which come in contact with them.

Treatment consists in hypodermic injections of strychnia, atropine, digitaline, and administration of stimulants and nutritives, either in drenches or enemas. It is sometimes necessary to secure and confine the patient in slings for several weeks or months, but mild cases usually do nicely in comfortable boxstalls. Feed and water from high mangers. Tonics and alteratives are beneficial during convalescence, which is generally tardy and unsatisfactory. The owners usually desire post-mortem examinations on the remains of horses killed by electricity; while horses severely shocked and injured are generally treated for some time, in order that damages may be legally recovered from the traction company.

A few cases may be cited to illustrate the above remarks. I have had a case under treatment and observation for about four months, and it is not yet well enough to walk out of the stable. Although the company veterinarian diagnosed it as a simple case of pleurisy, which would be cured in a few days, two of the ablest veterinarians in the city were called in as evidence and confirmed my diagnosis—electric shock.

Dr. J. E. McNeil kindly showed me a horse which had been shocked about a year ago and was then driven three miles to the country; the patient suffered severely and was unable to control his actions, and it was found necessary to confine him in slings for a period of twenty-one weeks. This horse is not yet fit for any work.

I saw a large, heavy draft horse that was shocked early last winter, and the owner finally became discouraged, and gave the horse away to a farmer.

There is a great variety of mild forms of electrical injuries which appear to cause a reduced or increased function of certain sets of muscles of locomotion, especially the abductors, flexors, and extensors of the posterior extremities.

ON THE PREPARATION OF AN ANIMAL SUTURE.

By G. A. JOHNSON, V.S., CARROL, IOWA.

(A Paper read before the Western Iowa Veterinary Medical Association)

It is a conceded fact that sutures made from animal tissue are preferable to those made of silk.

After some experiments with silk, cat gut, and other sutures, I conceived the idea of utilizing the tissues of the tendons of the horse for sutures. Taking one of the perforatus tendons from a mare that had died from a rupture of one of the iliac arteries, in trying to foal, I placed it in a strong corrosive sublimate solution for one week, then I separated the tendon into fine threads, which I twisted by rolling on a clean board with the hand, then with a sharp knife removed the rough points caused by broken fibres. After having thus dressed the threads I placed them in a bottle containing olive oil three parts and carbolic acid one part. The bottle was then tightly corked and set away for two weeks, then the sutures were placed in another bottle containing olive oil and tannic acid, one drachm of the acid to the ounce of oil. This bottle was tightly corked and allowed to stand for two weeks, when the sutures were ready for use.

The corrosive sublimate and carbolic acid thoroughly disinfect the sutures, and the tannic acid toughens them, and the olive oil keeps them soft and pliable.

It is very difficult to get the threads as smooth as the cat gut, and of late I have not attempted this, for when they are kept in the oil, they are so pliable that they can be used, conveniently, if they are a little rough.

Prepared as above delineated it takes four or five weeks for their absorption, in a closed cavity, or as buried sutures.

From five hundred to one thousand sutures can be made from one tendon, of varying size and lengths, up to sixteen to eighteen inches long.

It is easier to tease the threads out of dried tendons, but they are more readily absorbed.

These threads answer equally well for ligatures.

PILOCARPINE AS A PURGATIVE FOR THE HORSE.

BY THE SAME.

Pilocarpine hydrochlorate given hypodermically is a good hydragogue purgative for the horse; it is a mild systemic

stimulant, excites the activity of the glandular structures, especially the parotid glands and those of the intestinal tract, and stimulates peristole, thus causing the discharge of watery faeces.

Thus used it is especially valuable in cases of intestinal impaction, when the alvine excretions are liable to become hard and dry, and in cases where gastric distension has produced temporary intestinal paralysis.

When given hypodermically, in doses of one to three grains, it should produce a copious flow of saliva in three to five minutes, and an action of the bowels in twenty minutes to one hour, and if it does not the dose should be repeated.

In certain cases it may be well to combine eserine with the pilocarpine, yet much caution should be exercised in the use of this combination, and as eserine is a powerful sedative I have nearly discarded its use.

In comparison the two drugs are as follows:

PILOCARPINE.—General stimulant, increases the heart's action, mildly stimulates peristole, lowers temperature, produces watery faeces.

ESERINE.—Powerful sedative, decreases the heart's action, powerful peristaltic stimulant, increases temperature, does not alter the character of the faeces.

Thus it is seen that eserine is a much more powerful drug than pilocarpine, and will always produce more or less depression, consequently it should never be used when the action of the heart is weak, as is often the case in colic and indigestion.

While in pilocarpine we have a remedy that can be pushed, and in so doing we get the purgative action, and gain two points, i.e., an increased action of the heart and a lowering of the temperature. And by its sudorific action it lessens the tendency to congestion of the bowels.

Prof. Niles has demonstrated that eserine in doses of three grains will cause the discharge of watery faeces, while smaller doses do not alter the character of the faeces.

PATHOLOGICAL ANATOMY.

TUBERCULOSIS IN DOMESTICATED ANIMALS.

From the observations of European investigators it appears that *spontaneous* animal tuberculosis is not so rare amongst some of them as it has seemed to be. In the *Revue des Sciences Medicales* mention is made of a dog which had died from a natural attack of tuberculosis, in which the liver, kidneys and other abdominal organs were found filled with softish tumors having a sarcomatous appearance. The bacteriological examination and inoculation proved that the tumors were of a tuberculous nature, with numerous bacilli. This fact proves that it is an error to suppose that the organism of the dog possesses a peculiar serum which gives him immunity against tuberculosis.—*Revue des Sc. Medi.*

EXPERIMENTAL PATHOLOGY.

THE REGENERATION OF THE SUBSTANCE OF THE KIDNEY.

Experiments made by Kummell, of Germany, have proved that the removal of a portion of the kidneys, even to one-half of the organ, made in the longitudinal or transversal diameter, may be followed by the regeneration of the renal structure in about eight days. After the ablation of one-third of the organ three days only are necessary to restore it to its normal size. Microscopic examination shows that the new formation is not limited to the connective tissue alone, but involves also the parenchyma of the organs and the glomerule.—*Ibid.*

ANTHRAX IN FOWLS.

In ordinary circumstances fowls are refractory to anthrax. Their immunity is due to the phagocytory activity of the leucocytes. The bacillus of anthrax can grow and retain its virulence in the bodies of fowls, but its inoculation is followed by febrile reaction. There are conditions, however, in which fowls may become affected with anthrax and suc-

cumb to the attack. It is when they are deprived of the beneficial influence of leucocytes. For instance when six fowls were exposed to refrigeration by being placed in a cold bath, all died. Of eleven placed under the action of antipyrine, the mortality was smaller, six dying out of the eleven; or when under the action of chloral, when the mortality was still less, one dying out of eight.—*Ibid.*

EXTRACTS FROM FOREIGN JOURNALS.

German Review, by RICHARD MIDDLETON, D.V.S., Philadelphia, Pa.

MEAT INSPECTION IN BERLIN.

In the public slaughter houses of the central abattoir, there were 10,510 cattle, 8598 calves, 29,496 sheep and 38,729 swine killed, in Berlin, during the month of August. Altogether 87,333 animals as against 78,267 in August, 1890; an increase of 9066, of which 634 were cattle, 3087 sheep, and 5670 swine—325 calves less in Aug. 1891, than Aug. 1890.

Of those destroyed 651 were condemned as unfit for human consumption; this number includes 104 cattle (75 on account of tuberculosis and 26 from *tænia echinococcus*) 15 calves, 10 sheep and 522 swine (302 from tuberculosis, 105 from *tænia echinococcus*, and 26 on account of trichinæ). The number of individual parts and organs condemned amounted to 7829 (of these 3105 were from cattle); among this number were 2773 lungs and 1359 livers. In the city stations for the inspection of imported fresh meat 11,306 quarters of beef, 6994 calves, 5233 sheep, and 8284 swine were registered. Of these 25 quarters of beef, 16 swine (1 on account of trichinæ and 6 from *tænia echinococcus*), 1 calf, 4 sheep and 28 organs and parts, were condemned.

LIEGNITZ, Sept. 17.—According to official bulletins, the number of persons in Muhlradlitz afflicted with trichinosis has been 55; 5 of them have since died. The meat inspector was immediately suspended from office and will have a hearing.—*Wochensch.*

LEUCOCYTHÆMIA IN THE EQUIDÆ.

On the 24th of October there appeared in the intermaxillary space of a ten-year-old horse in good condition a swelling of the glands the size of one's thumb; other symptoms of disease absent. On the 21st of November swellings of a more painful character were apparent along the cervical region; at the same time a slight enlargement of the thyroid glands was remarked, and tumors appeared in various locations known to be richly supplied with lymphatic glands. Examinations of the blood revealed an increase in the proportion of white corpuscles to 1 in 70. The diagnosis was accordingly made as leucocythaemia, and the animal destroyed.

Before this was carried out, however, the swellings of the intermaxillary glands had abated, but the general condition continued to deteriorate. Upon post-mortem examination, noted enlargements were detected in the lymphatic glands of the mesentery, as well as the solitary follicles of the intestine. The bronchial glands, and also those of the neck, shoulder, axilla and inguinal regions, varied in size from a walnut to a hen's egg, and were medium hard.

Upon the cut surfaces of the tumor there exuded a thick, white fluid. Spleen and liver much hypertrophied; the former, weighing sixteen pounds, measured 81 cm. in length, 35 cm. in breath, and 10 cm. in thickness; color grayish-blue, hard and brittle, dry and coarse. Malpighian corpuscles and interstitial tissue enlarged. Liver hard, brittle and opaque, of grayish-yellow color, and weighing twenty-five pounds. Remaining organs healthy. Nodules absent in the spleen, liver and lungs. No pathological alteration in the marrow.—*Ztschr. f. Vet. K.* 3, 1.

INFECTIOUS MAMMITIS IN BOVIDÆ.

On November 10th, ten days before the appearance of an epizootic of foot and mouth disease, seven cows on a certain farm were affected with an apparently infectious inflammation of the mammary glands, whose intensity was of so severe a

nature as to necessitate the death of three of the patients within a period of fourteen days. The inflammation in each case embraced either two or three quadrants of the udder. In spite of careful and energetic treatment, which included deep incisions, only four of the animals were saved. In not a single case was recovery complete, since induration with subsequent abscess formation remained.

The foot and mouth disease took a more malignant course in this stable than in two others directly adjacent. Infectious abortion had been known in this same stable for fifteen years. From the foregoing we are led to believe that the apartment contained some occult source of infection; and, as a matter of fact, a drain of fair dimensions was discovered under the stalls and separated from them by means of a stone slab; stable was otherwise well ventilated.—*Thierhlk. n. Viehz.*

ETIOLOGY OF ACTINOMYCOSIS.

Prof. Growitz demonstrated, before the physician's club of Griefwold, a preparation from the jaw of a calf which had died of actinomycosis. In sawing through the osseous structure and granulations, which filled the cavities of the bone, he discovered several long grains of corn. It is highly probable that the fungus or actinomycetesdrus secured entrance through the laceration due to the corn.

DANGER IN FEEDING DECAYED POTATOES.

A farmer who had for the first time given his cows speckled potatoes partially cooked by scalding water discovered shortly afterward one of the animals suffering greatly from a dyspnoæ induced by tympanites.

The pausen was immediately punctured, but so violent was the fermentation that a second incision seemed advisable, whereupon the contents spurted forth upon the ground and also fell into the abdominal cavity, threatening peritonitis. In view of the liability to this complication the animal was de-

stroyed. In a second cow, which also exhibited tympanitic symptoms, the decomposition was retarded by injecting a two per cent. solution of acidum boracicum through the incision of rumenotomy.—*Deutsche Med. Ztg.* 1891, No. 77.

THERAPEUTIC NOTICES.

According to the recommendation of Hutyra, Lemke injected subcutaneously five grammes of ext. fld. hydrastis canadensis, dissolved in ten grammes of water, in each of three horses afflicted with purpura haemorrhagica. In two patients the swellings decreased rapidly and the animals recovered; in the third, however, the reduction in size was only nominal and the subject died. The vaso-motor stimulant characteristic of this agent has caused it to be thus used in morbus maculosus.—*Ztschr. f. Vet. K.*

Schmidt has confirmed the report of Ostertag by several trials that eseridine is still more unreliable than eserine. The physiological action, as well as the dose, varies exceedingly. There are now sufficient trials recorded to enable a definite judgment to be formed of the efficaciousness of eseridine.—*Arch. f. Wiss. n. Prakt. Th.*

ALVUS ABSTRACTA.

The *Clinica Veterinaria* No. 5 recommends for alvus abstracta in cattle the following:

R Ant. et pot. tart., ʒ vi,
pot. nit., ʒ iii,
gummi gutti, ʒ iii,
M. divid. in partes, xii,

Sig.—One part in a bottle of linseed tea every three hours.

DR. BILLINGS VINDICATED.

In the *Zeitschrift fur Hygiene*, a journal of original research published under the supervision of Prof. Koch, Vol. 10, just out, is an article by Dr. Theobald Smith, assistant in the Bur-

eau of Animal Industry, in which he endeavors to uphold the position of the government and to upset the Nebraska investigations, as well as to answer a very damaging and exact criticism published by Dr. Frosch in the ninth volume of the same journal. Dr. Frosch has answered Smith's attempt at justifying himself in such a complete manner that the best thing we can do is to offer a translation of the same, as the article is not long.

The foregoing article by Dr. Theobald Smith, and especially his comments on a contribution of my own, induces me to once again place my position regarding the American swine plague clearly before the world. To begin at once with the point that seems to have mostly irritated Smith, I do not think that any one but he can find in my former article any special partiality or unjust discrimination in favor of the investigations of F. S. Billings. Such an estimate of my contribution to the question is only possible to a person who has cursorily read the same, or who is profoundly ignorant of the character of the hygienic institute at Berlin, and the work which is done therein.

As I declared in the beginning of my previous article, the reception of the cultures from Billings at this institute, and the request of Prof Koch, led me to enter upon the study of the American swine plague. The task which I had to undertake was not, as Smith appears to believe, to decide as to whom belonged the most or earliest credit for work done, but to see how far, from a purely scientific point of view, the solution of the real question of the etiology of this disease had been advanced, which, at the time, seemed to be buried in darkness in consequence of contradictory publications.

That I should depend more upon my own investigations with the cultures at my disposal than upon the investigations of Billings, should not be questioned by Smith. That I should refer to the investigations of Billings, after assuring myself of the identity of his germ and Salmon's hog cholera germ, in order to decide as to the pathogenicity (disease-producing power) of the germs in swine, was forced by Smith himself, for, much as I regret to have to repeat it, the methods and ex-

periments published in the reports of the Bureau of Animal Industry, (1885 to 1887-8) do not correspond to the scientific conditions necessary to the establishment of a new infectious disease, in a manner to be desired.

It is by no means necessary for me to repeat what I said in my previous publication, as Smith admits it, in regard to the report of 1885, and on the other hand, the superficial investigations described in the other reports display so little exclusion and exact employment of Koch's methods to correspond with the importance of the assertion of the appearance of a new exciter of infection (germ), closely related to the swine plague.

I might here call attention to the fact that even in the work of Smith, described in his article in this issue of the *Zeitschrift*, the method for differentiating the two germs, the employment of the hanging drop, is not sufficiently reliable.

Smith also seems to complain that I have considered the mentioned reports of the Bureau of Animal Industry too closely after the standpoint of to-day. Even though we may have to-day new ideas of what a pure culture should be, or substantially other methods of obtaining the same, than formerly, still it was perfectly justifiable to prove the case as to how the earlier results of the Bureau correspond with these newer ideas.

As shown in my previous publication, it is evident from the report of the Bureau that at that time Koch's methods were well known there, and I do not think that it is demanding too much of the bacteriologists of the Bureau to assume that they were acquainted with the methods as published in their reports.

As to the slur upon Billings' work in Smith's publication, I can safely leave it to the former investigator to consider them. I have only to refer here to his inoculation experiments in swine, to which I am inclined to give full credit as reliable evidence, because Billings emphasizes the control of the pure cultures used in the same by other cultivating tests.

The number of these experiments was sufficiently great to demonstrate the infectiousness of the germs and their specific

characteristics. Smith neglects to observe that the experiments quoted by Billings were especially selected out of a great number. I find it remarkable that Smith should question these twelve published experiments of Billings, the value of which is beyond doubt.

The inference (by Smith) that I allowed Billings' publications to influence me in the consideration of Salmon's swine plague by no means corresponds with the facts. For judging this question I have referred to the publications of the Bureau on the assumption that in these official reports the most reliable material must be found.

In regard to the question as to whether the Salmon swine plague germ is an independent cause of a specific disease I cannot change my previously expressed opinion. How far I am right can best be judged by reading Smith's publication in this journal.

As will be remembered, Salmon, supporting himself on the German schweine seuche, distinctly and emphatically asserts the existence of an independent plague and at the same time united with the hog cholera, which has the same degree of extension over the country.

Judged by the investigations published in the reports of the Bureau, we find but proportionately few cases and these not free from objections, of the appearance of a disease-producing germ in chronic cases of hog cholera. The conditions closely resemble those seen in certain infectious diseases in man, where the secondary appearance of pathogenic germs has long been observed, without any one asserting them to be independent causal moments, or the cause of extensive epidemics.

The last two cases reported by Smith in favor of his swine plague do not give evidence which sufficiently excludes the concomitant existence of hog cholera also. At the same time and the same place, several swine are reported to have died from the cholera.

The fact stands for me confirmed that in the five years that have passed since the second plague was first announced not one single case of an independent appearance of Salmon's

swine plague has been reported which can be said to be free from objections.

The mistaken conception of Salmon's place in the swine plague investigations must be laid to the fact that the publications, both on swine plague and hog cholera, have his name and as such have been quoted in the literature.

From the present publication of Smith's, however, which could not be seen in reading the reports of the Bureau of Animal Industry, it is evident that Salmon was not the discoverer of either the hog cholera germ or that of the swine plague, so now we know the true condition of things in that regard.

NEW YORK PASTEUR INSTITUTE.

FIRST SEMI-ANNUAL REPORT—SECOND YEAR.

Dr. Paul Gibier, Director of the New York Pasteur Institute, begs to report upon the results of the preventive inoculations against hydrophobia performed at the Institute during the first six months of the second year of its existence (February 18th, 1891, to August 18th, 1891). During this time four hundred and fifteen persons, having been bitten by dogs, cats and other animals, applied for treatment. These patients may be divided into two categories:

1st. In the case of three hundred and forty-five of these persons it was demonstrated that the animals attacking them were not mad. Consequently the patients were sent back after having their wounds attended to during the proper length of time.

2nd. In seventy cases the anti-hydrophobic treatment was applied, hydrophobia of the animals inflicting bites having been evidenced clinically, or by inoculation at the laboratory, and in many cases by the death of some other persons or animals bitten by the same dogs.

Indigents have been treated free of charge.

The persons treated were:

New York.....	17	North Carolina.....	1
New Jersey.....	16	Michigan.....	1
Massachusetts	11	Pennsylvania.....	1
South Carolina.....	5	Rhode Island.....	1
Texas	5	Arkansas	1
Connecticut.....	3	Virginia.....	1
Maryland.....	2	Mexico	1
Missouri.....	2	West Indies (Curacao).....	1
Ohio.....	1		

DEATH BY HYDROPHOBIA AFTER TREATMENT.

Miriam Adams, five years old, of South Framingham, Mass. ; badly bitten July 14th last, in nineteen places by a dog recognized to be mad. Treated from July 15th to August 1st. Symptoms of hydrophobia appeared six days later (Aug. 6). Died Aug. 9th.

Three other persons (two sisters of the above patient), and a man, bitten by the same dog, who received the same course of treatment, are now enjoying good health.

This, so far, is the only death by hydrophobia out of the 255 cases treated at the Institute to date.

BIBLIOGRAPHY.

A TREATISE ON PRACTICAL ANATOMY. By H. C. BOENNING, M.D., with one hundred and ninety-eight wood engravings. F. A. Davis, Publisher. 1891. \$2.50.

Although the study of human anatomy is well provided for so far as a multiplicity of books of every degree of merit can accomplish it, and nothing needed by the student of that branch of science is lacking, the student of equine anatomy is far from being so fortunate, and must be content for the present with comparatively little help from the writers of books in his quest after the knowledge which is so indispensable a part of his equipment. With the exception of a few works which are little better than brief compilations, such as Chauveau's, or perhaps Strangeway's, in our English literature, we know of none written on a plan resembling that of this treatise of Dr. Boenning, and yet we can easily un-

derstand and appreciate the manner in which written descriptions and their arrangement, like the present, can become advantageous. Of course, a work like the present requires on the part of the author special study, with much real work in the dissecting room, resulting from a peculiar bent of the mind, and interest, if not enthusiasm, in the subject, and implies the existence of a taste for anatomical investigation, which is none too prevalent among his colleagues in the profession.

For those who cultivate a genuine interest, not only in veterinary, but also in human, or rather let us say, comparative anatomy, this excellent book will be found to possess great value. In bulk it is small; the descriptions are briefly, concisely and ably written, and the illustrations are well executed, and in a word, to borrow a highly original phrase (when first employed) "no (medical) library can be considered complete without it," whether the signature of the owner is written with two or with three final initials--M.D. or D.V.S.

THE COMPARATIVE ANATOMY OF THE DOMESTICATED ANIMALS.

By A. CHAUVEAU, Revised and Enlarged with the co-operation of S. ARLOING. Second English Edition. Translated and Edited by GEORGE FLEMING, C.B., LL.D., F.R.C.V.S. With numerous Illustrations. D. Appleton & Co. N. Y., 1891. \$7.00.

Our first glance at this second English edition of the translation of Chauveau's "Anatomy of the Domesticated Animals" brought us a disappointment. Anticipating that it would be made from the latest edition of the French publication—the *fourth*—this, the second of Fleming's—appears to be made from only the *third* of the original French.

Fleming's new book is revised and considerably enlarged, and though we cannot avoid regretting the absence of the colored plates of the fourth French edition, we cannot withhold our opinion that the work before us is far superior to the original, or first edition. It contains additional matter on the comparative anatomy of some of our domesticated animals, and the whole subject is illustrated by a large number of plates.

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For years this translation has been the leading text-book of the veterinary student, and for years it will continue to fill that place, and though other works on the same subject may be recommended by the favor of some of the teachers in our English speaking colleges, it is destined to become the undisputed standard *par excellence* amongst all.

CAUSE AND PREVENTIONS OF SWINE PLAGUE. By THEOBOLD SMITH, Ph.B., M.D., with Colored Illustrations. U. S. Department of Agriculture, Bureau of Animal Industry.

The matters treated in this new issue of the Bureau of Animal Industry have been the subject of much observation and consideration, together with the reasons of the *pros* and *cons* of the varying conclusions which have from time to time seemed to be reached. To be well posted, therefore, as to the theories held and the measures proposed for the extirpation of the evil in question, involves an extensive acquaintance and large study of our governmental disquisitions upon veterinary and sanitary topics, which constitute the bulk of our official medical literature. This new report presents additional facts in support of positions previously adopted and defended by the Bureau, and with fresh examinations and recent experiments, reinforces its former deductions and corroborates the results of previous investigations.

The book also contains a critical review of the writings of other investigators, which recommends itself to the careful reader for the quietness of the style and still the strength of the method in which differences in opinion or judgment upon technical work are discussed.

EPIDEMIC INFLUENZA. By R. SISLEY, M.D. Longman, Green & Co. \$2.00.

While this book (of 140 pages) mainly and ostensibly treats of influenza in the interest of its relations to the human family, one of the chapters, the 13th, is appropriated to discussion of the same (?) disease in animals. In this short chapter the author brings together a group of communications and opinions from various veterinary authorities, English and

continental, by way of a consensus of views in support of the theory of the identity of human and animal influenza, under a single denomination as one disease.

The book is ably written, printed from fair, legible type, and will afford interesting reading for veterinarians.

LA R. SCUOLA SUPERIORE DI MEDICINÆ VETERINARIA DI MILANO nel suo primo centennio 1791-1891.—(The Royal Superior School of Veterinary Medicine of Milan).

We have been favored with a copy of this great book, a work designed to enlighten the world in respect to the history of this royal veterinary institution from its origin to the present time. The material gathered in the 258 pages which compose the volume has been collected by the worthy director of the school, N. Lanzillotti Buonsanti, so well known to the veterinary scientific world through the numerous and able writings he has published, as well as by his contributions to the columns of the *Clinica Veterinaire*.

We have derived great pleasure from the reading of the present work, as well as from "looking at the pictures" which illustrate the text, and which show the progressive prosperity of the school, with the various accretions, year by year, through which it has reached its present condition. And we have inwardly queried, will the day ever come when a similar history can be written of our veterinary institutions, and wondered whether America, seventy-five years hence, will be able to boast, as old Europe does now, of her veterinary colleges.

SOCIETY MEETINGS.

BANQUET OF THE UNITED STATES VETERINARY MEDICAL ASSOCIATION AT WASHINGTON MEETING.

To the banquet-room at 8 p.m. the assemblage to the number of fifty wended their way. The table, describing a V in shape, covered with running vines and dotted with flowers, was further embellished with a number of beautiful designs. At

the head of the table was a large horse resting on a base, along which in colored flowers amid the white ones were the letters U. S. V. M. A. With our President doing the honors of toast-master in a very happy vein, at the head, at his right were seated Hon. Jeremiah Rusk, Secretary of Agriculture; Dr. C. B. Michener, Assistant Chief of Bureau of Animal Industry; Mr. Geo. W. Hill, Chief of Editing and Publication Division; while on his left were Drs. F. E. Parsons and Jno. W. Gadsden, and Congressman Warner. Scattered around the wings in happy groups were the members and delegates of the Association. The repast, a very enjoyable one, from oysters to quail, with relishes to render more palatable, was further enhanced by the sparkling fluids that brought forth in the succeeding hour the bright humor and wit so rare that will long mark this a memorable occasion in the memories of those who indulged in its joyous pleasures.

To the veterinary profession, and so strongly applicable to many of our Association, came the highest encomiums of praise for the work done for our nation, uttered by Assistant Chief Michener and Dr. J. E. Parsons of the staff. Our country freed from contagious pleuro pneumonia and our beef products entering the marts of the world, through the work of the veterinarian, told a long and gladsome story for our whole country.

The kind words of Secretary Rusk for us, with that winning welcome, so warm-heartedly bestowed, that bid us to his den, there to enjoy the hospitality that bade us place our feet upon his table and swap stories to our hearts' delight, made the halls ring with joyful laughter and applause, as he thus spoke of the immeasurable benefit we had rendered agriculture in all its ramifying sources. Looking upon us as of so much greater importance than our sister science of human medicine, he urged a greater care and more extensive preliminary education, that would not consider its course complete until our colleges taught our pupils how much slop to give a pig, how many rutabagas to feed a cow, how to groom a horse and feed him, and how to harness him, as well as to know which end of the saddle to place toward the head.

Calling unexpectedly upon our Philadelphia guest Dr. Jno. W. Gadsden, to respond to the toast of "Our President," with that chivalrous spirit and loyal manner so characteristic of his many years in the profession, he found a very willing heart and mind to honor the name of our country's ruler and to mete him the praise well due him, for so wise a choice in his Secretary of Agriculture, who so well and completely recognized the value of the veterinary profession, and whose work so far had so conclusively shown to the world the wisdom of his keen perception.

From the lips of Congressman Warner dropped sincere words for the veterinarian in his important relation to agriculture, and he joined in the high encomium of Secretary Rusk, and applauded the fact that through him and his Bureau of Animal Industry we would, in the next twelve months, ride into European ports on the back of fifty millions of dollars worth of pork.

The relation of the press and veterinarian were humorously characterized by Mr. Hill as he referred to the fact that he was a member of the body which furnished the wind or gas by which our work and achievements struck a sympathizing and appreciative chord along the line of human impulses, and it would be no little pleasure in the future to the daily press to continue to chronicle the advances made in veterinary science.

The profession and its rapid and strong work was warmly commended by Prof. Jas. L. Robertson, and his suggestive remarks that a Yankee did not have to attend college half as long as a German or Frenchman, to learn how to pick up a horse's foot or become a complete veterinarian, brought down the house in shouts of laughter and praise.

The colleges and their rapid increase in number and the need of a broader and higher curriculum was well considered by Dr. C. C. Lyford, and he highly encouraged and commended the step of this Association to-day, that promised to mark it a leader in veterinary science, and to thus stimulate and encourage the schools of veterinary learning to better and broader work.

Our hosts and our visitors, among whom our hours were so joyous and profitable, and the pleasure of our companionship to enjoy their hospitality, found pleasant thoughts and fast-gathering memories in the words of Messrs. Faville and Winchester.

The value of associations of veterinarians and the rich fruits they were bearing all over the country, and the broad work of this Association in encouraging and directing the same, proved a fruitful theme in the richness of thought of Vice-President Williams of the Association.

Among the honored heads around the table was one whose fifty and more years in the every day work of the profession, in the hard and laborious duties of a rural practice, in season and out of season, at all hours of the day and night, and over whose head has flitted almost four score of years, still working and toiling, honored and revered by all in his profession, loved by his people among whom he daily mingles and whose whole life is as untarnished as virgin gold, and whose integrity after fifty and more years still remains unquestioned; whose sincerely honest work in all that he has done still stands unchallenged, sat the venerable Isaiah Michener of Pennsylvania. Called to speak by toast-master Huidekoper, he gave utterance to these quaint and amusing remarks that had for its emblem the Association so well represented around the festal board:

"I attended the first call made for the purpose of forming a veterinary association, which was held in New York in 1863. The idea of forming such a society I think originated in the office of Dr. Jennings in Philadelphia; and I now propose to set up a horse to represent this society from its inception to the present time. In this preliminary meeting in Philadelphia we had a mare that was thought to be pregnant, and it was agreed that she should be taken to New York and professional accouchers should be summoned from Boston, Philadelphia and other places to be present on the anticipated parturient day. Well! the colt was soon born under the manipulations of the professors present. But, what a colt! It was ewe-necked, down-headed, narrow-breasted, crooked-

legged, walked on the fetlock joints and was thought by the professors to be near-sighted. The groom was ordered to lift it up and it soon began to feel about its mother's front legs for something to eat, when a wag present suggested that it hadn't horse sense; didn't know where to find the teat.

"Now, this colt must have a name, and a committee was appointed consisting of Drs. Stickney, Michener and others to give it one. In their consultations several names were suggested, one of which I remember was "Veterinary Association," which was vigorously opposed, because the vets. of Philadelphia had a short time before a meeting that a reporter attended and the next day published that he had attended a vegetarian meeting and all their talk was about horses, so that name would not do.

"I then suggested the name of 'United States Veterinary Medical Association,' which was adopted. It was a long, heavy name for such a nock-kneed youngster as he was. He was now left in the hands of a groom to be cared for for a year; then notices were sent all over, that any one wishing to become share holders in this promising youngster should meet in New York, which they did in goodly numbers, all of whom were delighted with the improvement the youngster had made; he now stands straight on his legs, head up, mane and tail combed out and smooth, glossy coat, all of which go to show that he has sprung from no mean ancestry.

"In a year from this we see this youngster on a trip to Boston, the great hub of the universe, and going at the rate of three minutes to the mile, and he shows the ability to keep it up; but some one remarked that his wind was not good, that he blowed and snorted as if he was a "Roarer," but he had to shut up quick, for an avalanche of contradictions that were showered upon him. Next we find him on a trip to Philadelphia, followed by a number of admirers. Next we see him on the road to Chicago at a neck-break rate of speed; he is there recognized as a standard bred horse, none better in the United States of America, and registered too.

"So anxious have our Pennsylvania law-makers been to have him well groomed and cared for, that they have extended the

time for applicants to take care of this horse for two years longer, and any one who has ever removed the placenta from a cow or found a soft place in her tail to cut into to let the wolf out, shall be entitled to register.

"But here to-day we find this noble horse standing erect, 16-1 hands high, proportioned in every part and ready for any emergency, and is worth to-day to the United States one hundred thousand dollars, and let me tell you, he knows oats from chaff, and if any of his numerous feeders expect him to partake of chaff or mouldy oats you will see by the set of his ears and cock of his eye that if you get too near to him you may feel the strength of his massenter muscles or the force of his heels.

"This horse is known all over the United States and people come from all parts of the country to see and admire him. And may he continue to develop under a law of evolution, until the lamps of Heaven are extinguished and the sun has burned out his splendor."

A tribute in feeling words, timely spoken and uttered from a sincere heart, to those of our number who had crossed to the other side never to return to us again; their life work and the lessons they had given were briefly told by Dr. Dougherty, and, standing, he asked that we drink in silence to their unforgotten memories.

Parting again for another year then became the duty of the hour and the meeting of 1891 must only now be one in joyful memory.

N. G.

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KEYSTONE VETERINARY MEDICAL ASSOCIATION.

The Keystone Veterinary Medical Association met at the College of Physicians, 13th and Locust Sts., Philadelphia, Oct. 3, 1891. Meeting called to order by the President, W. Horace Hoskins. There were present Drs. Hoskins, J. B. Raynor, Kooker, Lintz, Cullen, Webster, Eves, Werntz, and Schreiber, and as visitors Drs. Senseman, Gadsden, McDowell, and Dr. Benjamin Lee, Secretary City Board of Health.

The minutes of June and September meetings were read and approved.

Letter read from Dr. Formad, regretting his inability to be present to read his paper on account of his being compelled to go to New York unexpectedly.

A communication from Robert Formad, tendering his resignation as a member, was referred to the Board of Trustees for action.

The application of John Macfayden for associate membership was received, with the endorsement of Charles Lintz, V.M.D. Referred to the Board of Trustees for their report.

The President said that according to the communication received from Dr. Formad we would not have a paper from him on tuberculosis to-night. He was very sorry and thought those present were also. The subject is one that is of great interest to the sanitarian, whether he be a veterinarian, human practitioner or one of the laity. There is some obscurity on the subject that was to be discussed to-night, upon which he hoped there might be some light shed. The subject as announced was "Can tuberculosis be transmitted from the animal into the human system by milk?"

Dr. John W. Gadsden, being called upon, remarked that he was sorry he had not known that he was to be called to say anything on the subject, for he then would have been prepared with data as to facts. The preponderance of evidence is that tuberculosis is transmissible, and in his own mind there is no doubt of the fact; but there is some scientific investigation needed to prove it. In his own practice he quoted a case of a gentleman residing on Walnut street having a cow to which his attention was called professionally. Upon examination he found conclusive evidence of tuberculosis, and ordered her destroyed. The owner refused and continued to use the milk. His wife drank a great quantity of the milk, most of it while warm, fresh from the cow. She contracted tuberculosis and died.

Dr. W. B. Werntz is convinced that tuberculosis is transmissible by the milk from animal to animal and from animal to the human family. While a student at the University (Vet.

Dept.) they had a tubercular cow in the hospital under observation, and for experimentation. Dr. Huidekoper asked him to procure a young calf free from any tubercular taint, which he did from a Mr. Potts. The herd had never had a case of the disease nor has it had since up to this time. The calf was three days old when given to this cow to nurse. When six months old it was killed and every lesion of tuberculosis was present. Milk from the tubercular cow was fed to pigs which were known to be free from the disease, and they proved on autopsy to have contracted the disease.

There was a family living in West Philadelphia consisting of father, mother and eight children—the father an exceptionally strong, healthy man, from a family of long livers and free from any tubercular taint; the mother had no knowledge of any of her family that had ever died from any tubercular trouble—all very healthy people. Six of her children were raised by the breast and all are the very types of physical strength. The other two (boys) were raised by the bottle, owing to the mother having gathered breasts. These two boys died of consumption. The inference to be drawn in these cases is that the germs were taken into the system by the milk from tubercular cows.

Dr. Webster stated that there is a great amount of tuberculosis in his practice. In one dairy some of the milk was fed to a pen of pigs, which produced the disease in them. One of the pigs was killed and the lungs were sent to his place for examination, and a part of them were eaten by a pet cat of his weighing not less than twenty pounds. The cat is now in the last stages of consumption.

Dr. Eves stated that about Wilmington there is a great amount of the disease among the cattle, the milk of which is consumed by the citizens of Wilmington. He is not conversant with its effect upon the Wilmingtonians.

Drs. McDowell and Cullen were both of the opinion that the disease is transmissible, but had not the opportunity to follow up any particular events to prove their theories.

Dr. Benjamin Lee, Secretary of the Board of Health of Philadelphia, was glad to be present and see the interest

taken in the subject. Go on agitating and investigating the subject and we will give you all the aid that lays in our power. There is no doubt in my mind that many of the diseases that are not traceable are due to the transmissibility of the germs from diseased meat and milk. What we want is greater interest to be taken in the subject by veterinarians and physicians. If medical practitioners of both branches would do their duty we could get legislation to greatly decrease diseases and epidemics. You are all aware of the efforts made by the Board of Health to prevent the pollution of the streams of the State, and of our defeat by our learned legislators, due, in part, to the apathy of the medical profession, and largely to the money of manufacturers, dyers, and butchers.

Dr. Schreiber, Milk Inspector of Philadelphia, is of the opinion that the disease of tuberculosis is transmissible, not only from animal to animal, but to the human family. The best and surest way to remedy the evil is to destroy the animals affected.

The discussion was brought to a close.

Dr. Eves cited the following: "Was called on June 16th, 1889, to visit a cow suffering, as the owner stated, with a mysterious disease, having had seven to die within two or three weeks, this one making the eighth. The herd consisted of nine cows and one calf. I found No. 8 very weak; staggered when made to walk. Her posterior limbs were apparently partially paralyzed. Slight flow of saliva, eyes of an anxious, haggard appearance, slight protrusion, diarrhoea, painful venusmus. Symptoms given of frequent licking and biting at the feet and lower parts of legs (posterior). Appetite impaired; no trouble as to drinking. Inclined to be dull, but at times to be uneasy. Pulse weak and accelerated. Temperature normal. History of having been sick for several days and growing weaker. The other seven were held about in the same way, excepting one young cow, which was inclined to be cross, but not violent. The owner placed a great deal of stress upon the fact that they were continually biting the feet and legs. He would not allow me to destroy her,

but was to inform me of her death. Searched the pasture; found nothing unusual. Cows had been running on pasture all spring.

On July 3d held post-mortem; found No. 9 sick also; destroyed her, and found both presenting the same lesions. Rumen contained quantity of grass. Omasum was in the state of dry impaction—very dry. Posterior to this: Intestines and fourth stomach were empty. Intestines manifested lesions of diarrhoea; no enteritis. The liver tended to be rather friable. In fact, no marked lesions, excepting the impaction of the third stomach, which was thorough in both cases. The owner asked me this time to give him the symptoms of hydrophobia in the dog, which I did. He then told me that his dog certainly had the disease, and that he had seen him chasing and biting the cows several weeks previous. He acted so strangely that he shot him, but at the time thought nothing of his chasing the cows, excepting that it was unusual for him to do so. I did not make a diagnosis; in fact, I was at a loss to know what disease I was dealing with.

On July 4th, next day, I was called in another direction, about eleven miles from the first place, to see some cows. I found two cows held with precisely the same symptoms as the others I had visited, with the history of several others having died within two weeks. These cows were not violent; could handle them as the others, but seemed to be a little wild on approaching them, but I did so without trouble. Here received history of two dogs having been seen biting the cows about five weeks previous to my visit. The cows were bitten, and bitten considerably, but the bites were all healed at the time of my visit. Did not get a chance to hold post-mortem.

On July 17th called by another party to see a cow in the same district; cow showing same symptoms. No history of any dogs, but his neighbor, about half a mile distant, had lost nearly all his cows, and that he had shot a dog in the act of biting them, but after several, or rather nearly all, had been bitten. I drove over and received a complete history from the man that shot the dog. The symptoms were precisely

the same as those given previously, and that every cow that was taken died. His brother, directly opposite, had also lost a number of cows; the same dogs were seen among his cows and had bitten them. Two of them had the ends of their tails bitten off; they escaped the disease, having no other bites on them. These cows had all been visited by a veterinary surgeon, but not one yielded to treatment. The dog was a member of the shepherd family. His partner (the other dog) escaped, but was shot some time afterward, he acting in a peculiar manner.

About a week after this, another man, from nearly the same neighborhood, only one mile from Cases No. 2, called me to see a cow. I found her down with the same symptoms, but much wilder. Her eyes were rolling, her head swinging, and bawling, frothing at the mouth. He had five others to die, and one of them became very violent, and was shot while in the act of breaking everything to pieces. The same dogs were seen among his cows. I came to the conclusion, after seeing Cases No. 2, that I was dealing with rabies, and after getting the history later, I am confirmed of the diagnosis of rabies, as these farmers are all reliable men, and I believe their cows were bitten by these dogs, as they state. And the same dogs, with the exception of Cases No. 1, visited each herd that were affected. I at first thought of Texas fever, but the post-mortem changed my opinion immediately. About fifty cows in all were affected and died.

Dr. Hoskins reported a case as follows: The subject of this somewhat unusual and unique case was a large Maltese cat, about two years old. Was injured on March 9th from flobert rifle, with bullet marks at both inner and external canthus of right eye. Was ordered to my infirmary on 10th, treated antiseptically in conjunction with anodynes locally until the 26th, when I considered extirpation of the entire eye the best treatment, which was carried into effect. On the 5th of April the cat was sent home with the entire healing process apparently completed.

On June 8th my attention was again called to the cat, and found the orbital cavity partially filled with a catarrhal dis-

charge. A mild astringent wash gave the necessary relief in a few days.

On August 25th I was summoned to attend him for lameness. A thorough examination of the limb (the right forward) failed to reveal any cause for the same, and I again ordered him to my infirmary for treatment. On second examination, after watching the animal for twenty-four hours, I diagnosed a paralysis of the entire limb, and suspected a central cause for the same. At the time the eye-pit was in good condition, but in the face of a good appetite, the animal had lost much flesh and was very sluggish in all his movements. He grew worse from day to day, when on the 10th of September I obtained the owner's consent for his destruction. Carefully removing his integuments in the neighborhood of the face and fore limbs, I failed to find anything. I ordered an attendant to boil out the head, body and fore limbs. This revealed the presence of a misshapen rifle bullet at the anterior portion of the brain about the point of emergence of the optic nerves, firmly imbedded in the nerve and brain tissue.

On motion adjourned.

W. S. KOOKER, Secretary.

WESTERN IOWA VETERINARY MEDICAL ASSOCIATION.

The Western Iowa Veterinary Medical Association held its third meeting at Carroll, Ia., October 21st, 1891, President Johnson in the chair. Present: S. H. Johnson, Pres., J. I. Gibson, Vice-Pres., G. A. Johnson, Secretary-Treasurer, and Prof. W. B. Niles of the Veterinary Department of the Iowa Agricultural College.

Minutes of previous meeting read and approved.

Letters were read from J. Miller, V.S. Sioux City, S. Stewart, D.V.M., Council Bluffs, and J. M. Smith, V.S., Cherokee.

The President reported that as committee to procure a list of service fees of the Ontario Veterinary College and I. S. M. D. A., he had secured a list from the college but not the other.

Under unfinished business, two articles, one on ethics and one regulating changes of the by-laws, were added and the by-laws thus completed were adopted.

Under new business, the subject of legislation was discussed, and it was the unanimous opinion that it would be impossible to get an iron clad bill through the coming Legislature, and that any law that recognizes quacks just because they have been practising five or ten years is a detriment, and an insult to the profession. But all thought that a law could be framed and passed that puts no restrictions on quacks practising, but forbids them the use of the title of veterinarian or analogous titles. If such a bill can be had it will enlighten the public, so that they will know what kind of a practitioner they are employing.

A list of service fees were drafted, to be presented to the Iowa Veterinary Medical Association at the meeting to be held at Des Moines, Dec. 12 and 13, 1891.

The Secretary was elected a delegate to the Iowa State Veterinary Medical Association.

The application of J. J. Miller, V. S., of Sioux City was presented and he was elected a member.

The President then called on G. A. Johnson, who presented a paper on "The Preparation of Animal Sutures and Pilocarpine as a Purgative for the Horse."

During the discussion that followed, Prof. Niles advanced the idea that eserine in large doses caused the discharge of watery faeces.

Prof. Niles then reported a case, from the college hospital record, of pelvic abscess situated between the rectum and the vagina, which was opened per vagina, and readily healed under antiseptic treatment.

The Association then adjourned to meet again in Jan., 1892.

G. A. JOHNSON, *Secretary.*

SOUTH DAKOTA VETERINARY MEDICAL ASSOCIATION.

On September 24th several South Dakota veterinarians assembled in the parlor of the Cataract Hotel, Sioux Falls,

and organized an association which will be known as the South Dakota Veterinary Medical Association.

The objects of this Association are the mutual advancement of its members in veterinary science, the cultivation of fraternity, the elevation of the profession and the diffusion of the knowledge of veterinary medicine and surgery. After an hour's time passed in hand-shaking and making acquaintance, order was called. The constitution and by-laws were read, adopted and signed by those present. After which the following officers were elected:

President, Prof. C. A. Cary, B.S., D.V.M., Brookings, S. D.; Vice-President, Dr. W. F. Keller, D.V.S., Sioux Falls, S. D.; Secretary, Dr. D. B. McCapes, V. S., Vermillion, S. D.; Treasurer, Dr. E. K. Paine, D.V.M., Sioux Falls, S. D.

The meeting then adjourned until next year, when it is hoped there will be interesting topics before the Association and much benefit derived.

WESTERN PENNSYLVANIA VETERINARY MEDICAL ASSOCIATION.

The regular monthly meeting was held at Dr. J. C. McNeil's office, Saturday, Nov. 14th, '91. Dr. H. C. Jackson, of Sewickley, Dr. D. Martin, of McKeesport, and Dr. N. Recktenwald, of Southside, were present as visitors.

Minutes of last meeting read and approved.

James A. Waugh, V.S., read a paper on "Electrical Accidents to Domestic Animals," which was discussed by all present, and a vote of thanks was extended to the essayist.

Dr. J. C. McNeil will read a paper at the next meeting.

The next meeting will be held on the first Saturday in December. JAMES A. WAUGH, V.S., Secretary.

ALABAMA STATE VETERINARY MEDICAL ASSOCIATION.

The Alabama State Veterinary Association met at the parlors of the Exchange Hotel, Montgomery, A. H. French in the chair, and effected the following organization: A. H. French, D.V.S., President, Birmingham, Ala.; T. J. Kean, V.M.D., Vice-

President, Canebrake Agricultural Experiment Station, Uniontown, Ala.; Geo. W. Pope, D.V.S., Second Vice-President, Mobile, Ala.; W. J. Richardson, D.V.S., Third Vice-President, Birmingham, Ala.; M. B. Whitehead, D.V.S., Secretary and Treasurer, Montgomery, Ala. This meeting was called with the object of securing such necessary legislation for the practice of veterinary medicine in the State of Alabama as will maintain it in its proper place in medical science.

M. B. WHITEHEAD, *Secretary.*

ONTARIO VETERINARY COLLEGE MEDICAL SOCIETY.

The Ontario Veterinary College Medical Society met in College Hall Wednesday evening, Oct. 21, 1891, and effected their organization for the session of '91-'92 with the following gentlemen as officers; President, A. Smith, F.R.C.V.S.; Vice-President, C. H. Sweetapple, V.S.; Secretary, J. S. Grove, Akron, Ohio; Assistant Secretary, J. W. Watson, Peru, Indiana; Librarian, F. W. Swearingen of Illinois; Treasurer, J. H. Hester of Nebraska.

This Society meets twice a week for the reading of essays and communications, and the discussion of subjects relating to the profession.

These meetings in the past have been sources of the greatest benefit to the members, and the students of this year are showing a disposition to keep up a lively interest in the work, as was well demonstrated in the meeting of Oct. 23, when the following interesting programme was presented: R. W. Tuck, of Elgin, Illinois, essay on "Surra"; J. Pickle, of St. Mary's, essay, "Purgatives" (this paper elicited a great deal of discussion); A. Gemmill, Wingham, Ont., essay on "Wounds, and Their Modes of Healing." J. L. Badgley, of Pennsylvania, then read an interesting paper on "Symptomatic Anthrax." The following members then read reports of cases which had come under their care:—T. Macfarlane, Danville, Ill., "Neurotomy"; N. Clark, London, Ont., "Acute Laminitis"; E. Nodyne, Rochester, N. Y., "Intestinal Calculi"—a very interesting case, over thirty calculi, ranging in size

from one ounce to one and a half pounds, being found in the alimentary canal of a colt. H. Fulstow, of Elyria, Ohio, then read a report of a case of "Constipation," and the meeting adjourned to meet on Oct. 27th. J. S. GROVE, *Secretary.*

CORRESPONDENCE.

SUITABLE MEMBERS FOR THE U.S.V.M.A.

In reading the editorial in the October edition of the REVIEW, with regard to suitable and unsuitable candidates for admission to membership of the U.S.V.M.A., I notice the remark made, "Several of our two-year colleges graduate men who are not able to read or write the English language, and are total strangers to other tongues."

Then follows the question, "Are they suitable for membership?" Now, I do not see why this remark should refer only to two-year college graduates. If a man takes a course in a three-year college, and is as deficient in ordinary education as the two-year man, will he be able to read and write any better when he graduates? Certainly we do not find instruction in the three R.'s embraced in the curriculum of any veterinary college, and he is not apt to improve his writing by taking notes. If the standard of the matriculation examinations is increased, there will be no need for this question at all.

I cannot help thinking that the reason the veterinary surgeon of to-day is not always treated with the respect that he might be (as few will deny), is because many are so illiterate that they are unable to command that respect. The druggist sneers at some veterinary surgeon's prescriptions, and the physician is surprised that when he sends for a veterinary surgeon he is unable to converse grammatically about the case. The remedy for this is not to give the student another year at the veterinary college, but to give him another year at a grammar school before he enters the college at all.

If the matriculation examinations at veterinary colleges were of such a nature that only men of good education could gain admission to them, then this stumbling block to the profession would be removed forever.

How can prescriptions be written accurately unless the writer has a knowledge, even rudimentary, of Latin? And yet admission to colleges may be gained without the applicant knowing that such a language exists.

There is an old saying "Knowledge is power." Knowledge of what? Of veterinary science? Oh, no; such knowledge may bring money, and then the money bring power, but in these enlightened times such knowledge alone is not power.

Men of education turn toward the veterinary profession as a means of subsistence, and there are many more who, if they felt that it was a profession not open to the ignorant, would enlist in its ranks. Not being a member of the U.S.V.M.A. myself, I trust that these remarks will not be considered as out of place by its members, but I hear so much about veterinary etiquette now-a-days that I should like to hear something about education for awhile, for without the latter it is a farce to speak of the former.

Richmond, Va.

F. HARVEY, D.V.S.

AN INQUIRY.

MR. EDITOR: I would like to be enlightened on one point, if I may trespass upon your journal to that extent. Are employees of the Bureau of Animal Industry allowed to engage in private practice? If so, I think it but just that the Department of Agriculture grant a subsidy to every veterinarian not connected with the Bureau, in order that they may be placed upon an equal footing with its employes, since the private veterinarian is equally as capable, and oftentimes more so, for public practice than the Bureau veterinarian. Although the latter may know more about "tagging steers" yet he greatly handicaps his brother in the race for dollars. I have always thought that "no man could serve two masters," but this idiom appears to be untrue, to the detriment and positive injury of some of us practitioners. An answer to this query is desired.

NON NOBIS SOLUM.

VETERINARIAN WANTED.

OTTUMWA, Iowa, Nov. 15th, 1891.

DEAR SIR: Will you please send us the name and address of some good veterinarian wishing to locate in a good town in the West. We would prefer one that has practiced to some extent. If you will answer this you will confer a great favor.

Yours,

MICHAEL & STEPHENS.